

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 14

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 08/08/2013		2. CONTRACT NO. (If any) EP-C-12-055		6. SHIP TO: a. NAME OF CONSIGNEE CPD	
3. ORDER NO. 0010		4. REQUISITION/REFERENCE NO. PR-OW-13-00681			
5. ISSUING OFFICE (Address correspondence to) (FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268				b. STREET ADDRESS US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD	
				c. CITY Cincinnati	d. STATE OH
				e. ZIP CODE 45268	
7. TO: a. NAME OF CONTRACTOR TETRA TECH, INC.				f. SHIP VIA	
b. COMPANY NAME				8. TYPE OF ORDER <input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY	
c. STREET ADDRESS 10306 EATON PLACE STE 340				REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
d. CITY FAIRFAX		e. STATE VA	f. ZIP CODE 220302201		

9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE CPD	
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB					12. F.O.B. POINT Destination

13. PLACE OF a. INSPECTION Destination		b. ACCEPTANCE Destination		14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) 365 Days After Award	16. DISCOUNT TERMS
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17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	DUNS Number: (b)(4) FINALIZATION OF EPA'S RE-EVALUATION OF THE WISSAHICKON CREEK WATERSHED TMDL IN PENNSYLVANIA TOPO: Cheryl Atkinson Max Expire Date: 09/07/2014 Continued ...					

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
21. MAIL INVOICE TO:						
a. NAME RTP Finance Center						\$47,995.00
b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center Mail Drop D143-02 109 TW Alexander Drive						
c. CITY Durham						
				d. STATE NC	e. ZIP CODE 27711	17(i) GRAND TOTAL

22. UNITED STATES OF AMERICA BY (Signature) 				23. NAME (Typed) Noelle Mills TITLE: CONTRACTING/ORDERING OFFICER	
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SCHEDULE - CONTINUATION

2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 08/08/2013	CONTRACT NO. EP-C-12-055	ORDER NO. 0010
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	<p>Admin Office: CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 Period of Performance: 08/08/2013 to 09/07/2014</p> <p>Provide services in accordance with attached Performance Work Statement entitled, "FINALIZATION OF EPA'S RE-EVALUATION OF THE WISSAHICKON CREEK WATERSHED TMDL IN PENNSYLVANIA" This task order award is a result of RFP PR-R3-13-00301.</p> <p>The government will make provisional fixed fee payments on the basis of percentage of work completed. Award Type: Cost-plus-fixed-fee Total Estimated Cost: \$(b)(4) Fixed Fee: \$(b)(4) Completion Form</p> <p>Accounting Info: 13-14-B-87FT-202BD4X23-2505---1387TE30 02-001 BFY: 13 EFY: 14 Fund: B Budget Org: 87FT Program (PRC): 202BD4X23 Budget (BOC): 2505 DCN - Line ID: 1387TE3002-001 Funding Flag: Complete Funded: \$26,650.00 Accounting Info: 12-13-B-87FT-202B89-2505---1387TE3002-002 BFY: 12 EFY: 13 Fund: B Budget Org: 87FT Program (PRC): 202B89 Budget (BOC): 2505 DCN - Line ID: 1387TE3002-002 Funding Flag: Complete Funded: \$1,608.00 Accounting Info: 12-13-B-87FT-202BD4X22-2505---1387TE30 02-003 BFY: 12 EFY: 13 Fund: B Budget Org: 87FT Program (PRC): 202BD4X22 Continued ...</p>				47,995.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$47,995.00

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 348 (Rev. 4/2006)

Prescribed by GSA FAR (48 CFR) 53.213

SCHEDULE - CONTINUATION

3

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 08/08/2013	CONTRACT NO. EP-C-12-055	ORDER NO. 0010
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	Budget (BOC): 2505 DCN - Line ID: 1387TE3002-003 Funding Flag: Complete Funded: \$19,737.00					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

B-1 LOCAL CLAUSES EPA-B-16-102 ESTIMATED COST AND FIXED FEE

- (a) The estimated cost of this contract is \$(b)(4).
- (b) The fixed fee is \$(b)(4).
- (c) The total estimated cost and fixed fee is \$47,995.

F-1 LOCAL CLAUSES EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this contract shall be from 08/08/2013 through 09/07/2014 inclusive of all required reports.

G-1 LOCAL CLAUSES EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this task order are as follows:

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USEPA REGION 3
1650 Arch Street
Mail Code: 3WP30
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**PERFORMANCE WORK STATEMENT
TSAWP CONTRACT
EP-C-12-055
TASK ORDER 0010
FINALIZATION OF EPA'S RE-EVALUATION OF THE WISSAHICKON CREEK
WATERSHED TMDL IN PENNSYLVANIA**

A. BACKGROUND & OBJECTIVES

BACKGROUND

With the passage of the Clean Water Act (CWA), progress has been made in reducing water pollution from point sources. The goal of the CWA, however, still remains to be met. It has now become clear that the nation will not be able to attain or maintain water quality standards everywhere by controlling point sources alone. There are some situations where nonpoint source controls will be required in order to solve the existing water quality problems and mitigate threats to designated uses. One of the CWA tools available to develop holistic, integrated approaches to solving point and nonpoint source problems is the establishment of total maximum daily loads (TMDLs) under Section 303(d) of the CWA. In April of 1991 the Office of Water's Assessment and Protection Division published "Guidance for Water Quality-based Decisions: The TMDL Process." In July 1992, EPA published the final "Water Quality Planning and Management Regulation" (40 CFR Part 130). Together, these documents describe the roles and responsibilities EPA and the States have in meeting the requirements of Section 303(d) of the CWA, particularly the continued integration of nonpoint source and point source controls. EPA will provide information and assistance to Regions and States to support the implementation of water quality programs which incorporate point and non-point source controls. This work will support the States requirements to develop TMDLs for waters listed under Section 303(d) of the CWA.

EPA had begun work is to re-evaluate nutrient controls (specifically phosphorus) necessary in the Wissahickon Creek watershed necessary to attain and maintain Pennsylvania Department of Environmental Protection's (DEP) in stream goals established to comply with the state's narrative criteria. To date land use and NPDES discharge data was compiled to produce a watershed model for the Wissahickon Creek. The extent and condition of the data collected along with policy conversations between EPA and PADEP slowed completing the reevaluation of the Wissahickon Creek TMDL with respect to phosphorus control needs. EPA is seeking contractor assistance as described in the tasks described below to finish outstanding work on the reevaluation of the Wissahickon Creek TMDL with respect to phosphorus control needs.

OBJECTIVES

Nutrient TMDL development in the Wissahickon Creek watershed remains a complex and challenging endeavor and stakeholder involvement is an important consideration. EPA will require assistance engaging stakeholders and responding to public comments. Stakeholder considerations that EPA plans to address upfront include: 1) Technical evaluation of the nutrient requirements for the Wissahickon, specifically to determine if the value selected for the proposed

revised TMDL is sufficient to prevent nuisance algae and excessive proliferation of algae and plant growth or appropriate only to modify the algae species present; 2) Determination of the amount of nutrients being contributed by nonpoint sources of pollutants including MS4 areas during the low flow critical period. The contractor will use LSPC to determine the loadings from these sources for EPA consideration; 3) The contractor will use the existing Wissahickon LSPC watershed water model and EFDC receiving water model to develop appropriate allocations using the end point developed for other Ecoregional TMDLs (Indian Creek, Goose Creek) and re-evaluated in light of 2010 SAB peer review.

B. TASKS

Task 0: Kickoff Meeting, Reporting, and Communication

The contractor shall participate in a Kickoff Meeting with the TOPO via conference call to discuss the past activities on the Wissahickon Creek TMDL. The Kickoff Meeting will include a review of the deliverables in the PWS and look at dates for scheduling key (deliverable) meetings.

The Contractor shall coordinate and set-up bi-weekly status calls between EPA staff and the contractor's technical lead to discuss the status, progress, issues identified/resolved, issues still needing resolution and any anticipated delays. The contractor shall notify the TOPO of any problems, delays or questions as soon as they arise, including immediate written notification of any Task Order delays.

In addition, the contractor shall set up and coordinate monthly conference calls between EPA and Pennsylvania to discuss the status of this assignment and to resolve any outstanding issues. The contractor shall provide a call summary within 48 (working) hours of the call for EPA review and approval. The contractor shall participate in these calls. The frequency of calls may be modified based on project status at the request of the contractor and only as approved by EPA. The contractor shall provide a written monthly status report in accordance with contract requirements which will be used for invoice review purposes.

Task 0 Deliverables: The contractor shall provide EPA with the following:

1. Within 14 days of the award of the Contract, the Contractor shall schedule and hold a Kickoff Meeting via conference call with EPA to discuss past work on the Wissahickon nutrient/DO TMDLs and scope future work.
2. Within 48 (working) hours of the call the contractor should provide a written summary of the call for EPA review and concurrence.
3. Within 21 days of the award of the Contract, the Contractor shall provide a timeline / possible dates for public meetings.

Task 1: First Stakeholder Meeting on Draft Wissahickon Creek TMDL Scenario

The contractor shall present approximately 120 minutes of technical modeling and allocation material at the Stakeholder meeting in addition to making suggestions regarding future scenarios that Stakeholders may wish to see in a draft TMDL. Up to two contractor staff shall attend the first stakeholder meeting. EPA will present the timeline for finalizing/establishing the Wissahickon TMDL revision. EPA and the contractor will listen to Stakeholder wishes regarding future/alternative allocation scenarios.

Task 1 Deliverables: The contractor shall provide EPA with the following:

1. Within 30 days of the award of the Task Order, the contractor shall deliver by email for EPA approval a PowerPoint presentation on existing draft allocation scenario produced from 2012 LSPC/EFDC modeling work (revised Wissahickon TMDL) in coordination with EPA. EPA will provide comments within 1 week of receipt of the PowerPoint presentation and the contractor shall provide a final version within 1 week of receipt of EPA comments.
2. Within 30 days of EPA approval of the timeline (Task 0, deliverable 3), EPA will schedule and hold a stakeholder meeting within EPA's Region 3 Offices in Philadelphia to discuss a draft TMDL Scenario with Stakeholders. The Contractor shall present the EPA approved PowerPoint at the Stakeholder meeting.

Task 2: Draft Wissahickon Creek Nutrient TMDL Revision

The contractor shall perform calibration of the existing LSPC and EFDC models and may refine selected parameters as needed in consultation with EPA. The contractor shall provide the kinetic parameters and assumptions to EPA in the first draft of the TMDL report when it is submitted for EPA acceptance. The contractor shall use the published Wissahickon TMDL and modeling report, data and information supplied by EPA to develop a scientifically and legally defensible nutrient TMDL report. All calculations, modeling, assumptions and limitations shall be clearly documented in the TMDL report. The TMDL report shall include a source characterization, existing loads, total allowable load expressed as a seasonal or annual and daily load, individual load allocations and wasteload allocations (also for MS4s), address seasonality and critical conditions, and include a Margin of Safety (MOS). The report shall also include an assessment of natural recovery and an estimate of the time for natural recovery to occur and/or a section on reasonable assurance. All TMDL elements outlined in EPA's review template must be included and thoroughly explained in the TMDL document. The contractor shall work with EPA to prepare the report, data, and model for public notice.

Task 2 Deliverables: The contractor shall provide EPA with the following:

1. Within 80 days of the award of the Contract, the Contractor shall deliver calibrated LSPC and EFDC models and calibration statistics to EPA. EPA will provide comments within 1 week of receipt of the deliver calibrated LSPC and EFDC models and calibration statistics

and the contractor shall provide a final version within 1 week of receipt of EPA comments.

2. Within 120 days of the Stakeholder Meeting (Task 1.2 above), the Contractor shall deliver a draft TMDL report to EPA. The TMDL report shall include:
 - a. Executive Summary
 - b. Contents
 - c. Intro and Background (impaired waters, water quality criteria, TMDL targets)
 - d. Available Data and Analysis (hydrology, weather, land use, water quality data)
 - e. Source Assessment
 - f. TMDL Technical Approach
 - g. Model Development/Methodologies
 - h. Allocations and TMDLs
 - i. Reasonable Assurance
 - j. Public Participation (summary of public/stakeholder meetings)
 - k. References
 - l. Appendices (TBD – modeling calibration stats, TMDL endpoint information, Stressor Verification Report and other documentation included in administrative record, other documents provided by EPA related to implementation)
3. EPA will review the draft TMDL Report and provide edits and comments to the Contractor within 14 days of receiving the draft TMDL report.

Task 3: Public Participation of Draft TMDL

The contractor shall provide a revised draft TMDL for posting to the EPA website within 14 days of EPA comments. The contractor shall accompany EPA to one (1) public meeting to be held in the watershed during the public comment period. The contractor shall make a presentation at this meeting to describe the technical aspects of the TMDL development. Up to two contractor staff shall attend the public meeting and the presentation shall be approximately 60 minutes in length, with additional time for questions and answers following the 60 minute presentation.

Task 3 Deliverables: The contractor shall provide EPA with the following:

1. Within 14 days of the Contractor receiving EPA feedback on the Draft TMDL (Task 2, Deliverable 3), the contractor shall provide the Draft TMDL report to EPA to be posted on EPA's website for a 45-60 day public comment period. Region III will be responsible for posting the draft TMDL to EPA's website. See Section H of this document for EPA web requirements.
2. During the 45-60 day public notice and comment period, the Contractor shall accompany EPA to one public meeting in the watershed. The Contractor shall present the technical portion of the TMDL material (approximately 45 minutes of technical content) and EPA will speak to the timing and mechanics of the TMDL revision and establishment. The

Contractor shall prepare a PowerPoint presentation to support the meeting that can mostly be taken from existing presentations which will be provided by EPA 1 week prior to the scheduled meeting date.

Task 4: Response to Public Comments on the Wissahickon Nutrient TMDL Revision

The contractor shall assist EPA in preparing responses to comments received during the comment period. The contractor shall develop an Excel spreadsheet to house/sort the comments. EPA will identify and assign the comments to be addressed by the contractor.

Task 4 Deliverables: The contractor shall provide EPA with the following:

1. Within 15 days of the close of the public comment period, the Contractor shall prepare a spreadsheet of the public comment received in Excel. EPA will assign comments that will require a technical response to the Contractor and EPA will take the lead on responding to comments that require a policy decision.
2. Within 60 days of the close of the public comment period, the Contractor shall deliver draft responses to the technical comments assigned to the Contractor. EPA will provide comments within 2 week of receipt of draft responses to the technical comments assigned to the Contractor and the contractor shall provide a final version within 2 week of receipt of EPA comments.

Task 5: Final Wissahickon Creek Nutrient TMDL Revision

The contractor shall support EPA in finalizing the TMDL report such that all TMDL elements outlined in Attachment A are included and thoroughly explained in the TMDL document. Changes to the version of the report for public participation may occur as a result of public review and comment. EPA anticipates early stakeholder involvement should minimize modeling changes.

Task 5 Deliverables: The contractor shall provide EPA with the following:

1. Within 120 days of the Public Meeting (Task 3 above), the Contractor shall deliver a Final Draft Wissahickon Creek Nutrient TMDL report to EPA. The TMDL report shall include:
 - a. Executive Summary
 - b. Contents
 - c. Intro and Background (impaired waters, water quality criteria, TMDL targets)
 - d. Available Data and Analysis (hydrology, weather, land use, water quality data)
 - e. Source Assessment
 - f. TMDL Technical Approach
 - g. Model Development/Methodologies
 - h. Allocations and TMDLs
 - i. Reasonable Assurance
 - j. Public Participation (summary of public/stakeholder meetings and FINAL responses to public comments)

- k. References
 - l. Appendices (TBD - modeling calibration stats, TMDL endpoint information, Stressor Verification Report and other documentation included in administrative record, other documents provided by EPA related to implementation)
2. EPA will review the Final Draft TMDL and provide edits and comments to the Contractor within 2 weeks of receiving the draft TMDL report. The contractor shall incorporate comments and edits provided by EPA into a final TMDL within 2 weeks.

C. SCHEDULE & TIMING

In order to maintain this schedule, specific critical dates must be met. The schedule established below allows for unforeseen delays. These critical dates are as follows:

Timing:

Day 0 – Award of Contract, Fall 2013

Day 14 – Task 0, deliverable 1 – kickoff call

Day 21 – Task 0, deliverable 3 – timeline (including possible dates for public meetings)

Day 30 – Task 1, deliverable 1 – PPT Presentation on draft allocations

Day 65 – Task 1, deliverable 2 – first stakeholder meeting

Day 80 – Task 2, deliverable 1 – calibrated model (LSPC and EFDC)

Day 185 – Task 2, deliverable 2 – draft TMDL report

Day 213 – Task 3, deliverable 1 – draft TMDL ready for public participation

Day 213-273 – Task 3, deliverable 2 – public participation of TMDL, Contractor accompanies EPA to public meeting with PPT Presentation on draft TMDL

Day 288 – Task 4, deliverable 1 – spreadsheet/database of public comments

Day 333 – Task 4, deliverable 2 – responses to technical comments

No later than day 393 – Task 5, deliverable 1 – final TMDL report

This is EPA's estimate of time and sequence for this work. The contractor may adjust intermediate deliverables with EPA's approval as will expedite completion of the TMDL; however, interim deliverables may not be extended to impact the period of performance end date of the TO.

D. REPORTING

The contractor shall participate in status phone calls with the TOPO on an as-needed basis. The TOPO shall provide the contractor with a one-week notice of any scheduled status calls. All status calls will take place during normal business hours: 8:30 am to 5:00 pm Eastern Time.

All documentation and reporting under this Task Order shall be in compliance with contract requirements. See contract clause F.2, F.3, and J.2 "List of Attachments, Number 2 - Reports of Work".

E. TRAVEL

All travel under this Task Order shall be in compliance with contract requirements. See contract clause H.23. The contractor shall assume that the public meeting (Task 3) is within 20 miles of Philadelphia for pricing purposes.

F. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as Contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative.

The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the TOPO.

G. CONFERENCE/MEETING GUIDELINES AND LIMITATIONS

No single event under this Task Order is anticipated to exceed \$20,000. The contractor shall immediately notify the EPA Contracting Officer, PO and TOPO of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

H. VALIDATION OF TASK ORDER DELIVERABLES FOR SECTION 508 COMPLIANCE

The Contractor shall support the TOPO in conducting a "Final Deliverable Validation" to ensure compliance with Section 508 and the Federal Acquisition Regulations (FAR) related to "electronic and information technology (EIT) deliverables." The Contractor shall furnish certification, in writing, to the TOPO that the Contractor has complied with EPAAR Clause 1552.211-79 "Compliance with EPA Policies for Information Resources Management" (Reference Contract Clause C-1), including the requirement that all electronic and information technology (EIT) deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>. (Reference Contract Clause - 1 (c) and Attachment 1, PWS, Section 2.5.3.4, 3.7, and 4.3.7).

I. QUALITY ASSURANCE SURVEILLANCE PLAN

Per contract requirements.

J. NOTIFICATION OF COMPLETION OF TASK ORDER DELIVERABLES

When the Task Order reaches 30 calendar days prior to the end of the Period of Performance in a given period, the contractor shall make a determination that the deliverables, milestones, benchmarks, and any outstanding technical direction from the TOPO, will be satisfactorily completed in the form requested in the PWS by the end of the Period of Performance and for the remaining funding that is available.

If the contractor determines one or more of the above-referenced items will not be able to be completed in the requested form within the period of performance and with the available funding, the contractor shall notify the TOPO and the CO immediately. Within 5 business days of said notification, the TOPO in coordination with the CO will provide technical direction concerning use of the remaining funding to prepare and furnish to the TOPO all interim draft deliverables, interim work products, and any working files in an electronic format which is supported by EPA, for eventual continuation of the project after the end date of the Task Order.

K. ATTACHMENT

Attachment A Required TMDL Elements

The following must be included and thoroughly explained in the TMDL document:

- 1) *The TMDL is designed to meet the applicable water quality standards.*
- 2) *The TMDL includes a total allowable load as well as individual wasteload allocations and load allocations.*

Total Allowable Loads

The different sources in the TMDL are defined in the following equation:

$$\text{TMDL} = \text{WLAs} + \text{LAs} + \text{MOS}$$

Where: WLA = wasteload allocation, LA = load allocation, MOS = margin of safety

Wasteload Allocations

EPA regulations require that an approvable TMDL include individual WLAs for each point source. According to 40 CFR '122.44(d)(1)(vii)(B), Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with assumptions and requirements of any available WLA for the discharge prepared by the state and approved by EPA pursuant to 40 CFR '130.7." Furthermore, EPA has authority to object to the issuance of any National Pollutant Discharge Elimination System (NPDES) permit that is inconsistent with the WLAs established for that point source.

Load Allocations

According to Federal regulations at 40 CFR '130.2(g), LAs are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting loading. Wherever possible, natural and NPS loads should be distinguished.

- 3) *The TMDLs consider the impacts of background pollution.*

- 4) *The TMDLs consider critical environmental conditions.*

According to EPA's regulation 40 CFR '130.7(c)(1), TMDLs are required to take into account critical conditions for stream flow, loading, and water quality parameters. The intent of this requirement is to ensure that the water quality is protected during times when it is most vulnerable.

Critical conditions are important because they describe the factors that combine to cause a violation of water quality standards and will help in identifying the actions that may have to be undertaken to meet water quality standards. Critical conditions are a combination of environmental factors (e.g., flow, temperature, etc.), which have an acceptably low frequency of

occurrence. In specifying critical conditions in the waterbody, an attempt is made to use a reasonable worst case scenario condition. For example, stream analysis often uses a low flow (7Q10) design condition because the ability of the waterbody to assimilate pollutants without exhibiting adverse impacts is at a minimum.

Generally, in establishing the existing and allocation conditions for waterbodies, seasonal variations in hydrology, climatic conditions, and watershed activities are explicitly accounted for in the model. Frequently, both wet weather and dry weather conditions are identified as the critical condition. For example, under dry weather conditions, the direct deposition load from cattle may dominate. Under wet weather conditions, the nonpoint source loads from low-density residential and pasture areas may dominate. When the TMDLs are developed using a continuous simulation model, results will apply to both high and low flow conditions.

5) The TMDLs consider seasonal environmental variations.

Seasonal variations involve changes in stream flow and loadings as a result of hydrologic and climatological patterns. In the continental United States, seasonally high flows normally occur in early spring from snow melt and spring rain, while seasonally low flows typically occur during the warmer summer and early fall drought periods.

In establishing the existing and allocation conditions for watersheds, seasonal variations in hydrology, climatic conditions, and watershed activities are explicitly accounted for in the model.

6) The TMDLs include a Margin of Safety.

This requirement is intended to add a level of safety to the modeling process to account for any uncertainty. The MOS may be implicit, built into the modeling process by using conservative modeling assumptions, or explicit, taken as a percentage of the WLA, LA, or TMDL.

7) The TMDL has been subject to public participation.

8) The TMDL includes a Discussion of Reasonable Assurance.

L. REFERENCES

The 2006 Wissahickon TMDL can be found:

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/wissahickon/index.htm

The modeling report for the 2006 Wissahickon TMDL can be found:

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/wissahickon/NUTRIENT_MODEL_REPORT/index.htm

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES		
					1 4		
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
001		See Block 16C		PR-R3-14-00420			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
		CPOD				CPOD	
(FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268				CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268			
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				9A. AMENDMENT OF SOLICITATION NO.			
TETRA TECH, INC. 10306 EATON PLACE STE 340 FAIRFAX VA 220302201				(x)			
				9B. DATED (SEE ITEM 11)			
				X 10A. MODIFICATION OF CONTRACT/ORDER NO.			
				EP-C-12-055			
				0010			
				10B. DATED (SEE ITEM 13)			
				08/08/2013			
CODE (b)(4)		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)				Net Increase:		\$ (b)(4)	
See Schedule							
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
CHECK ONE							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
X FAR 52.232-20 Limitation of Costs							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not. <input checked="" type="checkbox"/> is required to sign this document and return <u>1</u> copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
DUNS Number: (b)(4)							
The purpose of this modification is to raise the estimated cost in the amount of \$(b)(4) to allow for completion of the work included in the Performance Work Statement. This change is fully funded. There is no change to fixed fee. The period of performance is extended through 4/14/2015. Please see attached revised schedule. TOPO: Cheryl Atkinson Max Expire Date: 04/14/2015 LIST OF CHANGES: Reason for Modification: Other Administrative Action Total Amount changed from \$(b)(4) to \$(b)(4) Obligated Amount for this modification: \$(b)(4) Incremental Funded Amount changed from \$(b)(4) to \$(b)(4) Continued ...							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				Noelle Mills			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16C. DATE SIGNED		16B. DATE SIGNED	
(Signature of person authorized to sign)				11 		ELECTRONIC SIGNATURE 09/04/2014	

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED EP-C-12-055/0010/001	PAGE 2 OF 4
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NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>NEW ACCOUNTING CODE ADDED: Account code: 14-15-B-87FT-202BD4X23-2505-1487TE3003-001 Beginning Fiscal Year 14 Ending Fiscal Year 15 Fund (Appropriation) B Budget Organization 87FT Program (PRC) 202BD4X23 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1487TE3003-001 Amount: \$25,648.00 Section B: Clause, EPA-B-16-102, is revised as follows: EPA-B-16-102 ESTIMATED COST AND FIXED FEE (a) The estimated cost of this contract is \$(b)(4). (b) The fixed fee is \$(b)(4). (c) The total estimated cost and fixed fee is \$73,643.</p> <p>Section F: Clause, EPA-F-12-101, is revised as follows: EPA-F-12-101 PERIOD OF PERFORMANCE The period of performance of this contract shall be from 8/8/2013 through 04/14/2015 inclusive of all required reports.</p> <p>Delivery: 365 Days After Award Delivery Location Code: CPOD CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 USA</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>FOB: Destination Period of Performance: 08/08/2013 to 04/14/2015 In consideration of the modification agreed to herein as complete equitable adjustments for the Contractor's request dated August 13, 2014, the Contractor hereby releases the Government from Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-C-12-055/0010/001

PAGE

OF

3

4

NAME OF OFFEROR OR CONTRACTOR

TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the request.				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 3	
2. AMENDMENT/MODIFICATION NO. 002		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO.	
5. PROJECT NO. (If applicable)		6. ISSUED BY (FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268		7. ADMINISTERED BY (If other than Item 6) CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) TETRA TECH, INC. Attn: (b)(4) 10306 EATON PLACE STE 340 FAIRFAX VA 220302201		9A. AMENDMENT OF SOLICITATION NO.		9B. DATED (SEE ITEM 11)	
10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-12-055 0010		10B. DATED (SEE ITEM 13) 08/08/2013		11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS	
12. ACCOUNTING AND APPROPRIATION DATA (If required) See Schedule		13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.		14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)	

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.249-14--Excusable Delays
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: (b)(4)

The purpose of this modification is to extend the period of performance from April 14, 2015 until September 30, 2015 to allow for completion of the work included in the Performance Work Statement. Please see attached revised schedule.

TOCOR: Cheryl Atkinson Max Expire Date: 09/30/2015

LIST OF CHANGES:

Reason for Modification : Other Administrative Action

Period Of Performance End Date changed from 2015-04-14 00:00:00 to 2015-09-30 00:00:00

CHANGES FOR LINE ITEM NUMBER: 1

End Date changed from 2015-04-14 00:00:00 to 2015-09-30 00:00:00

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) George Townsend, Vice President		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Noelle Mills	
15B. CONTRACTOR/OFFEROR <i>George Townsend</i> (Signature of person authorized to sign)	15C. DATE SIGNED 4/7/2015	16B. UNITED STATES OF AMERICA <i>Noelle Mills</i> (Signature of Contracting Officer)	16C. DATE SIGNED 4/8/15

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
EP-C-12-055/0010/002PAGE OF
2 3NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Section F: Clause, EPA-F-12-101, is revised as follows: EPA-F-12-101 PERIOD OF PERFORMANCE The period of performance of this contract shall be from 8/8/2013 through 09/30/2015 inclusive of all required reports.</p> <p>Delivery: 365 Days After Award Delivery Location Code: CPOD CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 USA</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>FOB: Destination Period of Performance: 08/08/2013 to 09/30/2015 All other terms and conditions shall remain unchanged.</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE OF PAGES

1

3

2. AMENDMENT/MODIFICATION NO.

003

3. EFFECTIVE DATE

See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

PR-R3-15-00511

5. PROJECT NO. (If applicable)

6. ISSUED BY

CODE

CPOD

7. ADMINISTERED BY (If other than Item 6)

CODE

CPOD

(FOR U.S. MAIL ONLY)

US Environmental Protection Agency

26 West Martin Luther King Drive

Mail Code: NWD

Cincinnati OH 45268

CPOD

US Environmental Protection Agency

26 West Martin Luther King Drive

Mail Code: NWD

Cincinnati OH 45268

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

TETRA TECH, INC.

Attn: (b)(4)

10306 EATON PLACE STE 340

FAIRFAX VA 220302201

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

x 10A. MODIFICATION OF CONTRACT/ORDER NO.

EP-C-12-055

0010

10B. DATED (SEE ITEM 13)

08/08/2013

CODE (b)(4)

FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

Net Increase:

\$53,959.00

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

X

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

FAR 52.243-2 Changes

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: (b)(4)

The purpose of this modification is to revise the PWS to add Subtask 4.2 for a Modeling Report. The attached PWS dated 8/26/2015 hereby replaces the previous PWS in its entirety. As a result of the PWS changes, the Task Order estimated cost plus fixed fee is increased by \$53,959, and these changes are fully funded. The period of performance for the Task Order is also extended to February 29, 2016, as a result of these changes. See revised Task Order clauses.

TOCOR: Cheryl Atkinson Max Expire Date: 02/29/2016

LIST OF CHANGES:

Reason for Modification: Supplemental Agreement for work within scope

Total Amount for this Modification: \$53,959.00

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Noelle Mills

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA

16C. DATE SIGNED

(Signature of person authorized to sign)

Noelle Mills

ELECTRONIC
SIGNATURE

(Signature of Contracting Officer)

09/17/2015

NSN 7540-01-152-8070

Previous edition unusable

STANDARD FORM 30 (REV. 10-83)

Prescribed by GSA
FAR (48 CFR) 53.243

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>New Total Amount for this Version: \$127,602.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Total Amount changed from \$73,643.00 to \$127,602.00</p> <p>Obligated Amount for this modification: \$53,959.00</p> <p>Incremental Funded Amount changed from \$73,643.00 to \$127,602.00</p> <p>End Date changed from 30-SEP-15 to 29-FEB-16</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code: 15-16-B-87FT-202BD4X22-2505-1587TE3003-001</p> <p>Beginning Fiscal Year 15</p> <p>Ending Fiscal Year 16</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 87FT</p> <p>Program (PRC) 202BD4X22</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 1587TE3003-001</p> <p>Amount: \$53,959.00</p> <p>Delivery: 02/29/2016</p> <p>Delivery Location Code: CPOD</p> <p>CPOD</p> <p>US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 USA</p> <p>Payment:</p> <p style="padding-left: 20px;">RTP Finance Center US Environmental Protection Agency RTP-Finance Center (D143-02) 109 TW Alexander Drive Durham NC 27711</p> <p>FOB: Destination</p> <p>Period of Performance: 08/08/2013 to 02/29/2016</p> <p>In consideration of the modification agreed to herein as complete equitable adjustments for the Contractor's email dated September 3, 2015, the Contractor hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the proposal.</p>				

**PERFORMANCE WORK STATEMENT
TSAWP CONTRACT
EP-C-12-055 TO 10
FINALIZATION OF EPA'S RE-EVALUATION OF THE WISSAHICKON CREEK
WATERSHED TMDL IN PENNSYLVANIA**

A. BACKGROUND & OBJECTIVES

BACKGROUND

With the passage of the Clean Water Act (CWA), progress has been made in reducing water pollution from point sources. The goal of the CWA, however, still remains to be met. It has now become clear that the nation will not be able to attain or maintain water quality standards everywhere by controlling point sources alone. There are some situations where nonpoint source controls will be required in order to solve the existing water quality problems and mitigate threats to designated uses. One of the CWA tools available to develop holistic, integrated approaches to solving point and nonpoint source problems is the establishment of total maximum daily loads (TMDLs) under Section 303(d) of the CWA. In April of 1991 the Office of Water's Assessment and Protection Division published "Guidance for Water Quality-based Decisions: The TMDL Process." In July 1992, EPA published the final "Water Quality Planning and Management Regulation" (40 CFR Part 130). Together, these documents describe the roles and responsibilities EPA and the States have in meeting the requirements of Section 303(d) of the CWA, particularly the continued integration of nonpoint source and point source controls. EPA will provide information and assistance to Regions and States to support the implementation of water quality programs which incorporate point and non-point source controls. This work will support the States requirements to develop TMDLs for waters listed under Section 303(d) of the CWA.

EPA had begun work is to re-evaluate nutrient controls (specifically phosphorus) necessary in the Wissahickon Creek watershed necessary to attain and maintain Pennsylvania Department of Environmental Protection's (DEP) in stream goals established to comply with the state's narrative criteria. To date land use and NPDES discharge data was compiled to produce a watershed model for the Wissahickon Creek. The extent and condition of the data collected along with policy conversations between EPA and PADEP slowed completing the reevaluation of the Wissahickon Creek TMDL with respect to phosphorus control needs. EPA is seeking Contractor assistance as described in the tasks described below to finish outstanding work on the reevaluation of the Wissahickon Creek TMDL with respect to phosphorus control needs.

OBJECTIVES

Nutrient TMDL development in the Wissahickon Creek watershed remains a complex and challenging endeavor and stakeholder involvement is an important consideration. EPA will require assistance engaging stakeholders and responding to public comments. Stakeholder considerations that EPA plans to address upfront include: 1) Technical evaluation of the nutrient

requirements for the Wissahickon, specifically to determine if the value selected for the proposed revised TMDL is sufficient to prevent nuisance algae and excessive proliferation of algae and plant growth or appropriate only to modify the algae species present; 2) Determination of the amount of nutrients being contributed by nonpoint sources of pollutants including MS4 areas during the low flow critical period. The Contractor will use LSPC to determine the loadings from these sources for EPA consideration; 3) The Contractor will use the existing Wissahickon LSPC watershed water model and EFDC receiving water model to develop appropriate allocations using the end point developed for other Ecoregional TMDLs (Indian Creek, Goose Creek) and re-evaluated in light of 2010 SAB peer review.

B. TASKS

Task 0: Kickoff Meeting, Reporting, and Communication

The contractor shall participate in a Kickoff Meeting with the TOCOR via conference call to discuss the past activities on the Wissahickon Creek TMDL. The Kickoff Meeting will include a review of the deliverables in the PWS and look at dates for scheduling key (deliverable) meetings.

The contractor shall coordinate and set-up bi-weekly status calls between EPA staff and the contractor's technical lead to discuss the status, progress, issues identified/resolved, issues still needing resolution and any anticipated delays. The contractor shall notify the TOCOR of any problems, delays or questions as soon as they arise, including immediate written notification of any Task Order delays.

In addition, the contractor shall set up and coordinate monthly conference calls between EPA and Pennsylvania to discuss the status of this assignment and to resolve any outstanding issues. The contractor shall provide a call summary within 48 (working) hours of the call for EPA review and approval. The contractor shall participate in these calls. The frequency of calls may be modified based on project status at the request of the contractor and only as approved by EPA. The contractor shall provide a written monthly status report in accordance with contract requirements which will be used for invoice review purposes.

Task 0 Deliverables:

The contractor shall provide EPA with the following:

1. Within 14 days of the award of the Contract, the contractor shall schedule and hold a Kickoff Meeting via conference call with EPA to discuss past work on the Wissahickon nutrient/DO TMDLs and scope future work.
2. Within 48 (working) hours of the call the contractor should provide a written summary of the call for EPA review and concurrence.

Task 1: First Stakeholder Meeting on Draft Wissahickon Creek TMDL Scenario

The contractor shall present approximately 120 minutes of technical modeling and allocation material at the Stakeholder meeting in addition to making suggestions regarding future scenarios that Stakeholders may wish to see in a draft TMDL. Up to two contractor staff shall attend the first stakeholder meeting. EPA will present the timeline for finalizing/establishing the Wissahickon TMDL revision. EPA and the contractor will listen to Stakeholder wishes regarding future/alternative allocation scenarios.

Task 1 Deliverables:

The contractor shall provide EPA with the following:

1. Within 30 days of the award of the Task Order, the contractor shall deliver by email for EPA approval a PowerPoint presentation on existing draft allocation scenario produced from 2012 LSPC/EFDC modeling work (revised Wissahickon TMDL) in coordination with EPA.
2. Within 30 days of EPA approval of the timeline (Task 0, deliverable 2), EPA will schedule and hold a stakeholder meeting within EPA's Region 3 Offices in Philadelphia to discuss a draft TMDL Scenario with Stakeholders. The contractor shall present the EPA approved PowerPoint at the Stakeholder meeting.

Task 2: Draft Wissahickon Creek Nutrient TMDL Revision

The contractor shall perform calibration of the existing LSPC and EFDC models and may refine selected parameters as needed in consultation with EPA. The contractor shall provide the kinetic parameters and assumptions to EPA in the first draft of the TMDL report when it is submitted for EPA acceptance. The contractor shall use the published Wissahickon TMDL and modeling report, data and information supplied by EPA to develop a scientifically and legally defensible nutrient TMDL report. All calculations, modeling, assumptions and limitations shall be clearly documented in the TMDL report. The TMDL report shall include a source characterization, existing loads, total allowable load expressed as a seasonal or annual and daily load, individual load allocations and wasteload allocations (also for MS4s), address seasonality and critical conditions, and include a Margin of Safety (MOS). The report shall also include an assessment of natural recovery and an estimate of the time for natural recovery to occur and/or a section on reasonable assurance. All TMDL elements outlined in EPA's review template must be included and thoroughly explained in the TMDL document. The contractor shall work with EPA to prepare the report, data, and model for public notice.

Task 2 Deliverables:

The contractor shall provide EPA with the following:

1. Within 60 days of the award of the Contract, the contractor shall deliver calibrated LSPC and EFDC models and calibration statistics to EPA.
2. Within 120 days of the first Stakeholder Meeting (Task 1 above), the contractor shall deliver a draft TMDL report to EPA. The TMDL report shall include:
 - a. Executive Summary
 - b. Contents
 - c. Intro and Background (impaired waters, water quality criteria, TMDL targets)
 - d. Available Data and Analysis (hydrology, weather, land use, water quality data)
 - e. Source Assessment
 - f. TMDL Technical Approach
 - g. Model Development/Methodologies
 - h. Allocations and TMDLs
 - i. Reasonable Assurance
 - j. Public Participation (summary of public/stakeholder meetings)
 - k. References
 - l. Appendices (TBD – modeling calibration stats, TMDL endpoint information, Stressor Verification Report and other documentation included in administrative record, other documents provided by EPA related to implementation)
3. EPA will review the draft TMDL Report and provide edits and comments to the contractor within 14 days of receiving the draft TMDL report.

Task 3: Public Participation of Draft TMDL

The contractor shall provide a revised draft TMDL for posting to the EPA website within 14 days of EPA comments. The contractor shall accompany EPA to one (1) public meeting to be held in the watershed during the public comment period. The contractor shall make a presentation at this meeting to describe the technical aspects of the TMDL development. Up to two contractor staff shall attend the public meeting and the presentation shall be approximately 60 minutes in length, with additional time for questions and answers following the 60 minute presentation.

Task 3 Deliverables:

The contractor shall provide EPA with the following:

1. Within 14 days of the contractor receiving EPA feedback on the Draft TMDL (Task 2, Deliverable 3), the contractor shall provide the Draft TMDL report to EPA to be posted on EPA's website for a 45-60 day public comment period. Region III will be responsible for

posting the draft TMDL to EPA's website. See Section H of this document for EPA web requirements.

2. During the 45-60 day public notice and comment period, the contractor shall accompany EPA to one public meeting in the watershed. The contractor shall present the technical portion of the TMDL material (approximately 45 minutes of technical content) and EPA will speak to the timing and mechanics of the TMDL revision and establishment. The contractor shall prepare a PowerPoint presentation to support the meeting that can mostly be taken from existing presentations which will be provided by EPA XXX days prior to the scheduled meeting date.

Task 4.1 Response to Public Comments on the Wissahickon Nutrient TMDL Revision

The contractor shall assist EPA in preparing responses to comments received during the comment period. The contractor shall develop either a spreadsheet or database (not both) to house/sort the comments in either Excel or Access. EPA will identify and assign the comments to be addressed by the contractor.

Task 4.1 Deliverables:

The contractor shall provide EPA with the following:

1. Within 15 days of the close of the public comment period, the contractor shall prepare a spreadsheet or database of the public comment received in either Excel or Access. EPA will assign comments that will require a technical response to the contractor and EPA will take the lead on responding to comments that require a policy decision.
2. Within 60 days of the close of the public comment period, the contractor shall deliver draft responses to the technical comments assigned to the contractor.

Task 4.2 Modeling Report for the Total Phosphorus TMDL for the Wissahickon Creek Watershed, Pennsylvania

The contractor shall provide a modeling report that details the steps taken to model the Wissahickon Creek in the development of the total phosphorus TMDL. The modeling report shall include:

- 1) Selected models: The report shall include what models were considered and why they were considered, what models were chosen and why they were chosen.
- 2) Input data: The report shall include where all input data was obtained, how it was quality controlled/quality assured, what data was eliminated and why it was eliminated, and how

missing data was handled. The report shall reference the model input files supplied to EPA to help provide a cross-walk to those analyzing the model input files.

- 3) Modeling assumptions: The report shall clearly state any and all modeling assumptions used in the development of the Wissahickon Creek TMDL and why those assumptions were made.
- 4) Model modules: The report shall provide a detailed description of the specific modules used with each module. The report shall also provide a detailed description of the submodules used within each module. The detailed description should include why the module/submodule was used, the governing equations of the module/submodule (with all variables defined), any code modifications made to the module/submodule, and justification for any code modifications. Particular attention should be paid to any modules/submodules involving sediment transport or algae. For EFDC, please include a section discussing why the Sediment Transport module was not used in this TMDL.
- 5) Watershed representation: The report shall provide a detailed description of how the physical parameters of the watershed (soil, land use, elevation, land segment slope, length of overland flow, stream cross-sections, and stream shading) are represented in the models. Please include a section on streamflow estimation with any flow balance equations used. Some of this information may overlap with the information listed in number 4 above.
- 6) Point source and nonpoint source representations: The report shall provide a detailed description of how the point sources (major and minor) and nonpoint sources (background and sceptics) are represented in the model. For wastewater treatment plants, please include how the Discharge Monitoring Report data is used and any equations it is used in. For MS4s, please provide a detailed description of how baseline conditions are calculated for each land use.
- 7) Model calibration and validation: The report shall provide a detailed description of how each of the models were calibrated and validated. The report shall clearly state the data used to calibrate and validate and the time periods over which the calibration and validation were conducted. The report shall go into particular detail with regards to the calibration and validation of algal parameters, total phosphorus, dissolved oxygen, and sediment.
- 8) Sensitivity analyses: The report shall include any sensitivity analyses that were performed during the development of the TMDL. A detailed description shall accompany the sensitivity analyses.
- 9) Baseline conditions and loadings: The report shall provide a detailed description (including equations) of how all baseline conditions were calculated. The report shall also

provide more detail on the allocation process than what is provided in the draft TMDL report. Finally, the report shall provide a detailed explanation as to why it is critical to meet the endpoint during the non-growing season. If there are documents that can provide additional clarity on the re-suspension of total phosphorus, please include them as a reference.

- 10) Critical conditions: The report shall provide a more detailed description of the critical conditions chosen for the TMDL than currently provided in the TMDL report.

EPA recognizes that some of the information requested above is already provided in the draft TMDL report. The contractor shall use language from the draft TMDL report where appropriate.

Below is a suggested outline for the modeling report. The contractor is not required to follow the outline, it is meant to provide guidance on how the information can be presented.

Suggested Outline for Modeling Report for the Total Phosphorus TMDL in the Wissahickon Creek Watershed, Pennsylvania

- 1) Introduction
 - a. Models considered
 - b. Models chosen
- 2) Input Data
- 3) LSPC Watershed Model
 - a. Overview
 - b. Model assumptions
 - c. Description of modules (PERLND, IMPLND, RCHRES, QUAL, etc.) and submodules
 - d. Watershed representation (including subwatershed division)
 - e. Point source and nonpoint source representation
 - f. Model calibration
 - g. Model validation
 - h. Sensitivity analyses
- 4) EFDC Receiving Water Model
 - a. Overview
 - b. Linkage to LSPC
 - c. Model assumptions
 - d. Description of modules (Hydrodynamic, Water Quality, etc) and submodules
 - e. Watershed representation (including grid setup)
 - f. Point source and nonpoint source representation
 - g. Model calibration

- h. Model validation
- i. Sensitivity analyses
- 5) TMDL Calculations
 - a. Critical Conditions
 - b. Baseline conditions calculations
 - c. Allocation process
 - d. Determination of loadings
- 6) Appendices (as appropriate)

Task 4.2 Deliverables:

The contractor shall provide EPA with the following:

1. Within 60 days of <the award of the Task Order Modification 3> the Contractor shall deliver a draft modeling report to EPA. The TMDL report shall include the items outlined above.
2. EPA will review the draft modeling report and provide edits and comments to the contractor within 15 days of receiving the draft modeling report. The contractor shall incorporate comments and edits provided by EPA into a final modeling report within 15 days.

Task 5: Final Wissahickon Creek Nutrient TMDL Revision

The contractor shall support EPA in finalizing the TMDL report such that all TMDL elements outlined in EPA's review template are included and thoroughly explained in the TMDL document. Changes to the version of the report for public participation may occur as a result of public review and comment. EPA anticipates early stakeholder involvement should minimize modeling changes.

Task 5 Deliverables:

The contractor shall provide EPA with the following:

1. Within 30 days after Final Modeling Report is delivered to EPA (Task 4.2 above), the contractor shall deliver a Final Draft Wissahickon Creek Nutrient TMDL report to EPA. The TMDL report shall include:
 - a. Executive Summary
 - b. Contents
 - c. Intro and Background (impaired waters, water quality criteria, TMDL targets)
 - d. Available Data and Analysis (hydrology, weather, land use, water quality data)
 - e. Source Assessment
 - f. TMDL Technical Approach
 - g. Model Development/Methodologies

- h. Allocations and TMDLs
 - i. Reasonable Assurance
 - j. Public Participation (summary of public/stakeholder meetings and FINAL responses to public comments)
 - k. References
 - l. Appendices (TBD - modeling calibration stats, TMDL endpoint information, Stressor Verification Report and other documentation included in administrative record, other documents provided by EPA related to implementation)
2. EPA will review the Final Draft TMDL and provide edits and comments to the contractor within 15 days of receiving the draft TMDL report. The contractor shall incorporate comments and edits provided by EPA into a final TMDL within 15 days.

Schedule:

In order to maintain this schedule, specific critical dates must be met. The schedule established below allows for unforeseen delays. These critical dates are as follows:

Timing:

Estimated Date	Task Description	Dependent Milestone
5/1/2015	EPA releases Draft TMDL Report and 45-day public comment begins	Within 20 days of mod issuance
5/21/2015	Public meeting in watershed to discuss TMDL	20 days after Draft TMDL released for public comment
7/1/2015	Public Comment Database	15 days after close of public comment
9/30/2015	Response to Technical Comments	30 days after Public Comment Database Delivered.
11/30/2015	Draft Modeling Report to EPA	Within 60 days of <the award of the Task Order Modification>
12/30/15	Final Modeling Report to EPA	Within 15 day of receipt of EPA comments on Draft Modeling Report
1/30/2016	Final Draft TMDL Report with Public Comments addressed	30 days after Final Modeling Report Delivered
2/29/2016	Final TMDL Report	Within 15 days of receipt of EPA comments on Final Draft TMDL Report

This is EPA's estimate of time and sequence for this work. The contractor may adjust intermediate deliverables with EPA's approval as will expedite completion of the TMDL; however, interim deliverables may not be extended to impact the period of performance end date of the TO.

C. REPORTING

D.1. The contractor shall participate in status phone calls with the TOCOR on an as-needed basis. The TOCOR shall provide the contractor with a one-week notice of any scheduled status calls. All status calls will take place during normal business hours: 8:30 am to 5:00 pm Eastern Time.

All documentation and reporting under this Task Order shall be in compliance with contract requirements. See contract clause F.2, F.3, and J.2 "List of Attachments, Number 2 - Reports of Work".

D. TRAVEL

All travel under this Task Order shall be in compliance with contract requirements. See contract clause H.23. The Contractor shall assume that the public meeting (Task 3) is within 20 miles of Philadelphia for pricing purposes.

E. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as Contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative.

The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the TOCOR.

F. CONFERENCE/MEETING GUIDELINES AND LIMITATIONS

No single event under this Task Order is anticipated to exceed \$20,000. The Contractor shall immediately notify the EPA Contracting Officer, CL-COR and TOCOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

G. VALIDATION OF TASK ORDER DELIVERABLES FOR SECTION 508 COMPLIANCE

The Contractor shall support the TOCOR in conducting a "Final Deliverable Validation" to ensure

compliance with Section 508 and the Federal Acquisition Regulations (FAR) related to “electronic and information technology (EIT) deliverables.” The Contractor shall furnish certification, in writing, to the TOCOR that the Contractor has complied with EPAAR Clause 1552.211-79 “Compliance with EPA Policies for Information Resources Management” (Reference Contract Clause C-1), including the requirement that all electronic and information technology (EIT) deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>. (Reference Contract Clause – 1 (c) and Attachment 1, PWS, Section 2.5.3.4, 3.7, and 4.3.7).

H. QUALITY ASSURANCE SURVEILLANCE PLAN: Per contract requirements.

I. NOTIFICATION OF COMPLETION OF TASK ORDER DELIVERABLES

When the Task Order reaches 30 calendar days prior to the end of the Period of Performance in a given period, the Contractor shall make a determination that the deliverables, milestones, benchmarks, and any outstanding technical direction from the TOPO, will be satisfactorily completed in the form requested in the PWS by the end of the Period of Performance and for the remaining funding that is available.

If the Contractor determines one or more of the above-referenced items will not be able to be completed in the requested form within the period of performance and with the available funding, the Contractor shall notify the TOCOR and the CO immediately. Within 5 business days of said notification, the TOCOR in coordination with the CO will provide technical direction concerning use of the remaining funding to prepare and furnish to the TOCOR all interim draft deliverables, interim work products, and any working files in an electronic format which is supported by EPA, for eventual continuation of the project after the end date of the Task Order.

J. REFERENCES:

The 2006 Wissahickon TMDL can be found:

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/wissahickon/index.htm

The modeling report for the 2006 Wissahickon TMDL can be found:

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/wissahickon/NUTRIENT_MODEL_REPORT/index.htm